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<110> Takano, Eriko
      Bibb, Mervyn

<120> Antibiotic Production

<130> 1381-PL02PUS1

<140> 10/017,471
<141> 2001-10-23

<150> 60/242,561
<151> 2000-10-23

<160> 19

<170> PatentIn Ver. 2.1


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Ile Glu Gln Thr Ala Leu Pro Val Pro Met Ala Leu Val His Arg Thr
20 25 30

Arg Val Gln Asp Ala Phe Pro Val Ser Trp Ile Pro Lys Gly Gly Asp
35 40 45

Arg Phe Ser Val Thr Ala Val Leu Pro
50 55

<210> 15
<211> 37
<212> PRT
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Ala Ala Ala Gln Val Phe Glu Lys Gln Gly Tyr Gln Ala Ala Thr Ile
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Thr Glu Ile Leu Lys
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<210> 16
<211> 215
<212> PRT
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20 25 30

Thr Glu Ile Leu Lys Val Ala Gly Val Thr Lys Gly Ala Leu Tyr Phe
35 40 45

His Phe Gln Ser Lys Glu Glu Leu Ala Leu Gly Val Phe Asp Ala Gln
50 55 60

Glu Pro Pro Gln Ala Val Pro Glu Gln Pro Leu Arg Leu Gln Gln Leu
65 70 75 80

Ile Asp Met Gly Met Leu Phe Cys His Arg Leu Arg Thr Asn Val Val
85 90 95

Ala Arg Ala Gly Val Arg Leu Ser Met Asp Gln Gln Ala His Gly Leu
100 105 110

Asp Arg Arg Gly Pro Phe Arg Arg Trp His Glu Thr Leu Leu Lys Leu
115 120 125

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Leu Asn Gln Ala Lys Glu Asn Gly Glu Leu Leu Pro His Val Val Thr
    130                 135                 140

Thr Asp Ser Ala Asp Leu Tyr Val Gly Thr Phe Ala Gly Ile Gln Val
145                 150                 155                 160

Val Ser Gln Thr Val Ser Asp Tyr Gln Asp Leu Glu His Arg Tyr Ala
                165                 170                 175

Leu Leu Gln Lys His Ile Leu Pro Ala Ile Ala Val Pro Ser Val Leu
            180                 185                 190

Ala Ala Leu Asp Leu Ser Glu Glu Arg Gly Ala Arg Leu Ala Ala Glu
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Leu Ala Pro Thr Gly Lys Asp
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<210> 17
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<400> 17

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Ile Glu Gln Thr Ala Leu Pro Val Pro Met Ala Leu Val His Arg Thr
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Arg Val Gln Asp Ala Phe Pro Val Ser Trp Ile Pro Lys Gly Gly Asp
        35                  40                  45

Arg Phe Ser Val Thr Ala Val Leu Pro His Asp His Pro Phe Phe Ala
    50                  55                  60

Pro Val His Gly Asp Arg His Asp Pro Leu Leu Ile Ala Glu Thr Leu
65                  70                  75                  80

Arg Gln Ala Ala Met Leu Val Phe His Ala Gly Tyr Gly Val Pro Val
                85                  90                  95

Gly Tyr His Phe Leu Met Thr Leu Asp Tyr Thr Cys His Leu Asp His
            100                 105                 110

Leu Gly Val Ser Gly Glu Val Ala Glu Leu Glu Val Glu Val Ala Cys
        115                 120                 125

Ser Gln Leu Lys Phe Arg Gly Gly Gln Pro Val Gln Gly Gln Val Asp
    130                 135                 140

Trp Ala Val Arg Arg Ala Gly Arg Leu Ala Ala Thr Gly Thr Ala Thr
145                 150                 155                 160

Thr Arg Phe Thr Ser Pro Gln Val Tyr Arg Arg Met Arg Gly Asp Phe
                165                 170                 175

Ala Thr Pro Thr Ala Ser Val Pro Gly Thr Ala Pro Val Pro Ala Ala
            180                 185                 190

Arg Ala Gly Arg Thr Arg Asp Glu Asp Val Val Leu Ser Ala Ser Ser
        195                 200                 205
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Gln Gln Asp Thr Trp Arg Leu Arg Val Asp Thr Ser His Pro Thr Leu
210 215 220

Phe Gln Arg Pro Asn Asp His Val Pro Gly Met Leu Leu Leu Glu Ala
225 230 235 240

Ala Arg Gln Ala Ala Cys Leu Val Thr Gly Pro Ala Pro Phe Val Pro
245 250 255

Ser Ile Gly Gly Thr Arg Phe Val Arg Tyr Ala Glu Phe Asp Ser Pro
260 265 270

Cys Trp Ile Gln Ala Thr Val Arg Pro Gly Pro Ala Ala Gly Leu Thr
275 280 285

Thr Val Arg Val Thr Gly His Gln Asp Gly Ser Leu Val Phe Leu Thr
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Thr Leu Ser Gly Pro Ala Phe Ser Gly
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<210> 18
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20 25 30

Arg Leu Ala Ala Asp Gly Ala Leu Val Ala Val His Tyr Gly Ser Ser
35 40 45

Glu Ala Ala Ala Arg Glu Thr Val Glu Thr Ile Arg Ser Ser Gly Gly
50 55 60

Gln Ala Leu Ala Ile Arg Ala Glu Leu Gly Val Val Gly Asp Ala Ala
65 70 75 80

Ala Leu Tyr Ala Ala Phe Asp Ala Gly Met Gly Glu Phe Gly Val Pro
85 90 95

Pro Glu Phe Asp Ile Leu Val Asn Asn Ala Gly Val Ser Gly Ser Gly
100 105 110

Arg Ile Thr Glu Val Thr Glu Glu Val Phe Asp Arg Leu Val Ala Val
115 120 125

Asn Val Arg Ala Pro Leu Phe Leu Val Gln His Gly Leu Lys Arg Leu
130 135 140

Arg Asp Gly Gly Arg Ile Ile Asn Ile Ser Ser Ala Ala Thr Arg Arg
145 150 155 160

Ala Phe Pro Glu Ser Ile Gly Tyr Ala Met Thr Lys Gly Ala Val Asp
165 170 175

Thr Leu Thr Leu Ala Leu Ala Arg Gln Leu Gly Glu Arg Gly Ile Thr
180 185 190

Val Asn Ala Val Ala Pro Gly Phe Val Glu Thr Asp Met Asn Ala Arg
195 200 205

Arg Arg Gln Thr Pro Glu Ala Ala Ala Ala Leu Ala Ala Tyr Ser Val
210 215 220

Phe Asn Arg Ile Gly Arg Pro Asp Asp Ile Ala Asp Val Val Ala Phe
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Leu Ala Ser Asp Asp Ser Arg Trp Ile Thr Gly Gln Tyr Val Asp Ala
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Thr Gly Gly Thr Ile Leu
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<212> DNA
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